



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,154	12/18/2001	Hideo Yamakura	16869S-040000US	6231
20350	7590	09/26/2005	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			DAVIS, DAVID DONALD	
			ART UNIT	PAPER NUMBER
			2652	

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*Supplemental*  
**Office Action Summary**

Application No.

10/025,154

Applicant(s)

YAMAKURA ET AL.

Examiner

David D. Davis

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5,6,13,17,18,21 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 5-6 and 13, 17, 18, 21 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Prosecution Application*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 4, 2005 has been entered.

### *Information Disclosure Statement*

2. Receipt is acknowledged of the Information Disclosure Statement (IDS) received May 26, 2004.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 2652

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-2, 5-6 and 13, 17, 18, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billington (US 4,523,243) in view of Zammit (US 5,210,667). Billington shows in figure 1 a thin-film magnetic head on a substrate 6 having a slider surface including a first magneto-resistive effect element 16 configured to detect a magnetic signal from a magnetic recording medium. Figure 1 of Billington also shows a second element 34 & 36 disposed adjacent to the first magneto-resistive effect element 16 and configured to measure an amount of lapping of the first magneto-resistive effect element 16 along the slider surface.

The first magneto-resistive effect element 16 includes a first magneto-resistive effect film; an upper shield film 62 disposed above the first magneto-resistive effect film; and a lower shield film 6 is disposed below the first magneto-resistive effect film. The second element has a structure that is substantially the same as that of the first magneto-resistive effect element 16.

Billington shows in figure 1 the first magneto-resistive effect element 16, the second element 34 & 36, a first electrode and a second electrode 50, 52 & 58. The magneto-resistive effect film is disposed between the first electrode and the second electrode such that the first magneto-resistive effect element 16 and the second element have substantially similar shapes.

Zammit shows in figure 3 an inductive element 34 coupled to the first magneto-resistive effect element 16 and configured to write information on a magnetic recording medium. Figures 3 and 6 show an end portion of the first magneto-resistive effect element constituting a portion of the slider surface.

Art Unit: 2652

Billington is silent, however, as to the second element, which is a lapping element, being a magneto resistive element. Billington is also silent as to the substrate being formed of a non-magnetic material of  $\text{Al}_2\text{O}_3$ -TiC or SiC.

Zammit shows in figure 3 a second element 50, which is a lapping element being a magneto resistive element.

Official Notice is taken of the fact that substrates are formed of a non-magnetic material  $\text{Al}_2\text{O}_3$ -TiC or SiC.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to substitute the lapping element of Billington with the lapping element of Zammit. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to substitute one lapping element with another magneto resistive lapping element, which is well within the purview of a skilled artisan and absent an unobvious result, because to the two elements are considered art recognized equivalents. Also substituting a lapping element a magneto resistive lapping elements simplifies the design and materials procurement by duplicating the elements within the magnetic head thereby cutting manufacturing cost.

It also would have been obvious to a person having ordinary skill in the art at the time the invention was made to specify that the substrate of Billington was formed of a non-magnetic material  $\text{Al}_2\text{O}_3$ -TiC or SiC as taught in the art. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to specify that a substrate was formed from a non-magnetic material  $\text{Al}_2\text{O}_3$ -TiC or SiC, which is well within the

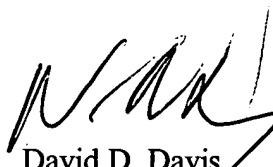
Art Unit: 2652

purview of a skilled artisan and absent an unobvious result, because the non-magnetic material is easily obtainable and cost effective.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is 571-272-7572. The examiner can normally be reached on Monday thru Friday between 7:30-4:00. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600. Any other inquiry should be directed to the customer service center whose telephone number is (703) 306-0377.

  
David D. Davis  
Primary Examiner  
Art Unit 2652

ddd  
September 20, 2005